

In The Claims

1 – 4 (Cancelled)

5. (Currently Amended) A heat exchange panel to be conformed to a complex shape comprising:

 a first layer of a flexible material, which layer is conformable to a complex shape;

 a second layer of a flexible material, which layer also is conformable to a complex shape and has a common border with the first layer;

 a border seal sealing substantially an entire periphery of the first layer and the second layer at said border; and

 said first and second layers being directly secured together interiorly of said border at a multiplicity of points to form a dot matrix of attachments organized into first imaginary lines and second imaginary lines for connecting dots of said dot matrix to nearest dots of said dot matrix, said first imaginary lines crossing said second imaginary lines at an angle falling in a range of between about 70° to about 110°;

 wherein:

 the border seal consists of curvilinear ripples having ripple cycle lengths substantially shorter than the length of said border, forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure, further comprising:

 a first port for passing fluid into the panel;

 a second port for passing said fluid out of the panel; and

 at least one fence interiorly of said border sealing the first layer and the second layer, said fence cooperating with said border to define a fluid flow channel within said panel, wherein:

 the fence includes curvilinear ripples having ripple cycle lengths substantially shorter than the length of the fence.

6 – 8 (Cancelled)

9. (Currently Amended) A method of manufacturing a heat exchange panel which conforms to a complex shape comprising steps of:

sealing a first layer of a flexible material, which layer is conformable to a complex shape to a second layer of a flexible material at a common border, which second layer is also conformable to a complex shape; and

sealing said first layer to said second layer interiorly of said border at a multiplicity of points to form a dot matrix of attachments, said dot matrix organized into first imaginary lines and second imaginary lines for connecting dots of said dot matrix to nearest dots of said dot matrix, said first imaginary lines crossing said second imaginary lines at an angle falling in a range of between about 70° to about 110°;

further comprising steps of:

constructing first and second ports for passing a fluid into and out of said panel; and

sealing said first layer to said second layer with at least one fence between said first port and said second port, said fence having curvilinear ripples having ripple cycles lengths substantially shorter than the length of said fence, forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure.

10 – 13 (Cancelled)

14. (Currently Amended) A method for exchanging heat with a complex shape, comprising steps of:

receiving a fluid flow in a first port;

restricting passage of said fluid flow to between first and second layers of flexible material which are conformable to a complex shape;

further restricting said passage with a border seal at a common border between said first and second layers;

passing said fluid flow about a multiplicity of points interiorly of said first and second layers, said first and second layers being directly secured together to form a dot matrix of attachments organized into first imaginary lines and second imaginary lines

connecting dots of said dot matrix to nearest dots of said dot matrix, said first imaginary lines crossing said second imaginary lines at an angle falling in a range of between about 70° to about 110°; and

issuing said fluid flow through a second port;

further restricting said fluid flow with at least one fence between said first port and said second port;

wherein:

said fence includes curvilinear ripples having ripple cycle lengths substantially shorter than the length of the sealing fence, forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure.

15 – 18 (Cancelled)

19. (Currently Amended) A system for exchanging heat with a complex shape, comprising:

a heat transfer device for one of cooling or heating a fluid;

a pump/reservoir coupled to the heat transfer device for storing and pumping said fluid; and

a heat exchange panel coupled to the pump/reservoir and the heat transfer device, the heat exchange panel including a first layer of a flexible material conformable to a complex shape, a second layer of a flexible material also conformable to a complex shape, a border seal sealing said first layer and said second layer together at said border, a first port for receiving said fluid, a second port contiguous with said first port for issuing said fluid, and said first and second layers being directly secured together interiorly of said border seal to form a dot matrix of attachments between said first and second layers, said dot matrix organized into first imaginary lines and second imaginary lines for connecting dots of said dot matrix to nearest dots of said dot matrix, said first imaginary lines crossing said second imaginary lines at an angle falling in a range of between about 70° to about 110°;

wherein: the heat exchange panel further includes at least one fence interiorly of the border sealing said first layer and said second layer, said fence cooperating with said border to define a fluid flow channel within said panel; and

wherein:

said fence includes curvilinear ripples having ripple cycle lengths substantially shorter than the length of said fence, forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure.

20. (Previously Presented) The panel of claim 5 wherein said first and second ports are contiguous.

21 – 22 (Cancelled)

23. (Currently Amended) A heat exchange panel to be conformed to a complex shape, comprising:

a first layer of a flexible material, which layer is conformable to a complex shape;
a second layer of a flexible material, which layer also is conformable to a complex shape;

a border seal sealing substantially an entire periphery of the first layer and the second layer to form a border, the border seal consisting of curvilinear ripples having ripple cycle lengths substantially shorter than the length of said border forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure, further including at least one fence interiorly of said border, which fence is sealed to the first layer and the second layer and includes curvilinear ripples having ripple cycle lengths substantially shorter than the length of the fence forming an irregular border with respect to the dot matrix of attachments, in order to provide uniform flow and pressure..

24. (Previously Presented) The heat exchange panel of claim 23 further including a first port for passing fluid into the panel and a second port for passing said fluid out of the panel, and first and second ports being contiguous.